COLLAR FORMATION USING SELECTIVE SiGe/Si ETCH

ABSTRACT OF THE DISCLOSURE

A method of forming collar isolation for a trench storage memory cell structure is provided in which amorphous Si (a:Si) and silicon germanium (SiGe) are first formed into a trench structure. An etching process that is selective to a:Si as compared to SiGe is employed in defining the regions in which the collar isolation will be formed. The selective etching process employed in the present invention is a wet etch process that includes etching with HF, rinsing, etching with NH_4OH, rinsing, and drying with a monohydric alcohol such as isopropanol. The sequence of NH_4OH etching and rinsing may be repeated any number of times. The conditions used in the selective etching process of the present invention are capable of etching a:Si at a faster rate than SiGe.